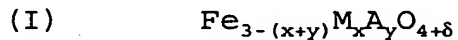


CLAIMS

1. The use as a sensitive material in a thin layer for bolometric detection of infrared radiation, of a material having a spinel ferrite structure of chemical composition, ignoring doping agents if any are present, satisfying empirical formula I:



in which iron is the majority metallic element;

M presents a metal or a combination of two or more transition metals other than iron;

A represents at least one metal selected from magnesium and aluminum;

the metals and the oxygen being in the form of ions;

x represents the number of metal ions M, whether identical or different metals;

y represents the number of metal ions A;

x may lie in the range 0 to 2, and whatever x, $x < 3 - x - y$,

y may lie in the range 0 to 0.5; and

δ represents 0 or a positive number that is sufficiently small for the substance of formula I to contain at least one metal present in the form of ions having two different oxidation states and situated on the same sublattice of the spinel structure.

2. A use according to claim 1, in which M is a metal selected from Co, Cu, Mn, Zn, Ni, V, Cr, Mo, W, Ti, Zr, Hf, and rare earths, presenting an ionic radius compatible with being integrated in the spinel structure, or a combination thereof.

3. A use according to either preceding claim, in which M represents a metal selected from Co, Cu, Mn, Ni, Zn, and Ti, or a combination thereof.

4. A bolometric device for detecting infrared radiation or for infrared imaging, the device comprising at least

one sensor provided with a sensitive element in the form of a thin layer as defined in any preceding claim.

- 5 5. A bolometric device according to claim 4, in which
said sensor, inserted in a packet including an inlet
window that is transparent to infrared, comprises a
membrane capable of absorbing infrared radiation and of
converting it into heat, said membrane being disposed in
such a manner as to be capable of being exposed to
10 incident infrared radiation that has passed through the
inlet window, and in such a manner as to transmit a
fraction of the heat produced in this way to said
sensitive element.
- 15 6. A device according to claim 4 or claim 5, comprising a
plurality of said sensors in the form of an array of
pixels.
- 20 7. A device according to claim 6, in which said array is
connected to a CCD or CMOS matrix.
- 25 8. A method of detecting infrared radiation or of
producing infrared imaging with the help of a bolometric
device capable of absorbing incident radiation, of
converting it into heat, and of communicating a fraction
of the heat produced to a sensitive element of
resistivity that varies with temperature, in which said
device is a device as defined in any one of claims 4 to
7.